and the religious respect of such bodies formed two leading features in ancient science and mythology. In some of the earlier chapters he very properly gives the elements of astronomical knowledge requisite to calculating the position of the stars at fixed periods, and also the methods for determining with accuracy the "orientation" of buildings. This is by no means the same everywhere, and he justly observes that where we find such a contrast as in the temples of Thebes and Memphis, in one of which we find "solstitial" and in the other "equinoctial" orientation, it demands almost a difference of race to explain it.

Professor Lockyer, availing himself of the French and German surveys of the temples of Egypt, aided by studies of his own made on the spot, finds that one of the main objects of the temple of Karnak, for instance, was for the purpose of obtaining an exact observation of the precise time of the solstice; that many of the temples were not intended for solar but for stellar observations; and as these, owing to the change of place of the stars, would not have remained true for more than three hundred years, they furnish us a means of approximating the date of their construction. On this theory, the author calculates one of the temples at Edfu to have been constructed for the observation of the star Canopus, and to have been built about 6400 B. C. This extends the epoch of culture in Egypt far beyond the time usually fixed by modern archæologists, and illustrates the great value of the author's methods, if they should prove acceptable to the scientific world.

Several chapters of the volume are occupied with the astronomy of the early Babylonians. It would seem this was based on independent observations not less ancient than those of Egypt, but at first exerting no influence upon them. Later, at an undetermined but a very remote period, the astronomic science of northern (lower) Egypt was deeply tinged with the stellar and solar doctrines and myths of Mesopotamia.

The volume is full of suggestions for future research, and there is no question but that it puts in the hands of investigators new methods of throwing unexpected light on the origins of civilization. We earnestly hope that not in the Old World only, but in the great ruins of Mexico, Central America and Peru, they will be applied.

Inorganic Chemistry for Beginners. By SIR HENRY ROSCOE, F.R.S., D.C.L., LL.D., M.P. Assisted by JOSEPH LUNT, B.Sc. (Vict.), F.C.S. New York and London, Macmillan and Co., 1893, 245 p.

WE are always glad to welcome a text-book such as the above, and to mark its improvement over the vast number of elementary text-books in chemistry which have become so common of late. The book is arranged with a proper understanding of a beginner's necessities, and instead of a few paragraphs on chemical theory followed by a dictionary-like description of the chemical elements, we have a proper discussion of the principles, the study of the elements being introduced by a careful analysis of these principles as applied to a few, well chosen, typical examples. It is ridiculous to expect a beginner in any science to grapple at once with its particular symbols and to memorize details which are of no moment. We say of no moment, for without proper introduction these details are meaningless. The laboratory manual has too often been mistaken for a text-book of the science.

We note particularly in the above work the chapters on elements and compounds, combination in definite and multiple proportions, calculations, physical measurements, and the properties of gases. In Part II. the following non-metallic elements are studied with their more important compounds: Oxygen, hydrogen, nitrogen, chlorine, sulphur and carbon.

Principles and Practice of Agricultural Analysis. A manual for the Examination of Soils, Fertilizers and Agricultural Products. By HARVEY W. WILEY, Chemist of the United States Department of Agriculture. Easton, Pa., The Chemical Publishing Company. Vol. I., No. 1, 1894.

THE first number of this work has been received, and while it may yet be too early to judge of the character of the book as a whole, our expectations are raised, and we shall look for an epoch-making work on agricultural chemistry. Professor Wiley is of all men in this country the most competent to write upon the subject, his long connection as Chief of the Chemical Department of the United States Department of Agriculture and his many writings in scientific journals being sufficient evidence of this. Part first includes an introduction, in which the elements of the earth's "crust" are discussed, particularly in their relation to agriculture, together with the rock-forming minerals and finally the subject of rocks and rock decay. The typographic work is excellent, and the number is well illustrated with sketches and with reproductions of photographs illustrating microscopic rock structure and the physical changes in rocks. It is proposed to issue this work in twenty to twenty-four monthly parts of forty-eight pages each, selling at twenty-five cents a number.

NOTES AND NEWS.

MACMILLAN & Co.'s announcements of forthcoming books include "The Study of the Biology of Ferns by the Collodion Method," for advanced and collegiate students, by George F. Atkinson, associate professor of cryptogamic botany in Cornell University; "Mental Development in the Child and the Race," by James Mark Baldwin, Stuart professor of experimental psychology in the College of New Jersey, author of "Handbook of Psychology," etc.; "Materials for the Study of Variation in Animals," part i., "Discontinuous Variation," by William Bateson, M. A., Balfour student and fellow of St. John's College, Cambridge, illustrated; "A Three Months' Course of Practical Instruction in Botany," by F. O. Bower, D.Sc., regius professor of botany in the University of Glasgow; abridged edition of "A Course of Practical Instruction in Botany," by the same author; "A History of Mathematics," by Florian Cajori, professor in Colorado College; "A Course in Experimental Psychology," by James McKeen Cattell, A.M., Ph.D., professor of experimental psychology in Columbia College; "The Gypsy Road, a Journey from Krakow to Coblenz," by Professor G. A. J. Cole, M.R.I.A., F.G.S., illustrated; "Elements of Metaphysics," by Professor Karl Deussen, of Kiel, authorized translation; "Life in Ancient Egypt," described by Adolf Erman, translated by H. M. Tirard, with numerous illustrations and maps; "Physiology for Beginners," by Michael Foster, M.A., M.D., LL.D., F.R.S., and L. E. Shore, M.A., M.D., B.C.; "Western Europe in the Fifth Century," lectures delivered at Oxford, by E. A. Freeman, D.C.L., late regius professor of modern history in the University of Oxford; "Western Europe in the Eighth Century," lectures delivered at Oxford by E. A. Freeman, D.C.L.; "The Life of Sir A. C. Ramsay," by Sir Archibald Geikie, F.R.S.; "A Short Manual of Philology for Classical Students," by P. Giles, M.A., fellow of Gonville and Caius College, reader in philology in the University, Cambridge, uniform with Dr. Gow's "Companion to School Classics"; "Town Life in the Fifteenth Century," by Alice Stopford Green, in two volumes, 8vo; "Hydrostatics," by A. G. Greenhill, F.R.S., professor of mathematics to the senior class of artillery officers,